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Pablo S. Ocal*, 1287 S Cochran Ave, Unit 1, Los Angeles, CA 90019. *The Relative Künneth Theorem.*

The Künneth Theorem is a well known tool to control the homology of the tensor product of complexes. In this talk I will present an analogous result in the context of relative homological algebra. This will include an unpretentious introduction to relative homological algebra, and some of its derived functors. To achieve our goal we describe a long exact sequence for relative Tor that splits in 2 out of 3 terms, which can also be used to characterize relative flat modules using relative Tor groups in a very familiar way. This work reconciles several interpretations of relative free and flat modules. (Received August 30, 2021)